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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.     | CONFIRMATION NO. |
|---|-------------|----------------------|-------------------------|------------------|
| 09/769,721  | 01/25/2001  | Kurt E. Spears       | 10002651-1              | 5042             |
| 7590  | 06/21/2004  |                      | EXAMINER                |                  |
| HEWLETT-PACKARD COMPANY<br>Intellectual Property Administration<br>P.O. Box 272400<br>Fort Collins, CO 80527-2400 |             |                      | AGGARWAL, YOGESH K      |                  |
|   |             |                      | ART UNIT                | PAPER NUMBER     |
|   |             |                      | 2615                    |                  |
|   |             |                      | DATE MAILED: 06/21/2004 |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 09/769,721             | SPEARS ET AL.       |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Yogesh K Aggarwal      | 2615                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-8 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 25 January 2001 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

|  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)              |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date 2. | 6) <input type="checkbox"/> Other: _____.  |

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 5 is rejected under 35 U.S.C. 102(e) as being anticipated by Misawa et al. (US Patent # 6,700,607).

[Claim 5]

A method of scanning, comprising:

exposing, an array of photosensors (figure 2 (b): 12), to light, a first time (col. 6 lines 25-27); transferring charges, from a first block of photosensors (figure 2(b): green G) in a first array of photosensors, to a charge shift register (figure 2(b): 14), wherein the block comprises less than all the photosensors, and only charges from the first block are transferred (Col. 5 lines 4-7 figure 2(b) disclose that the first block of photosensors comprised of green color pixels in a first array of photosensors transfer charges to the charge shift registers 14 and the block of green pixels comprise less than all the photosensors);

transferring charges, from a second block of photosensors (figure 2(b): red R) in a second array of photosensors, to the charge shift register (figure 2(b): 14), where only the charges from the second block are transferred, so that charges from blocks from more than one array of

photosensors are multiplexed onto the charge shift register (Col. 5 lines 4-7 figure 2(b) disclose that the first block of photosensors comprised of green color pixels in a first array of photosensors transfer charges to the charge shift registers 14 and the block of red pixels comprise less than all the photosensors and these charges are multiplexed in the vertical shift register 14).

3. Claim 7 is rejected under 35 U.S.C. 102(b) as being anticipated by Elabd et al. (US Patent # 5,196,939).

[Claim 7]

Elabd teaches a method of scanning, comprising transferring charges, from a block of photosensors in an array of photosensors (figure 3: 13), to a charge shift register (figure 3: 17), wherein the block comprises less than all the photosensors, and only the charges from the block are transferred (col. 4 lines 30-41 teach that only particular rows of the photosensor array 13, corresponding to those selected by the user, are transferred to transfer registers 17A and 17B, the rest are dumped in the vertical dump drain 35), repeating the step of transferring charges until the charge shift register is filled with charges only from the block of photosensors (col. 10 lines 15-17 teach that after all the charges are transferred to the transfer register 17 from a particular block of photosensors, they are clocked and added until all the data held in the transfer register 17 is moved out. Furthermore col. 11 lines 24-26 teach that all the steps of claim 15 including transferring of charges from the first row to the transfer register are repeated until all the data is read out).

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murayama et al. (US Patent # 4,974,093) in view of Elabd et al. (US Patent # 5,196,939).

[Claim 1]

Murayama teaches exposing, an array of photosensors (figure 8), to light, a first time and transferring charges, from a block of photosensors in the array of photosensors, to a charge shift register, wherein the block comprises less than all the photosensors, and only the charges from the block are transferred (col. 8 lines 18-26, figure 9). Murayama further teaches exposing, the array of photosensors, to light, a second time and transferring charges, from the block of photosensors in the array of photosensors, to the charge shift register, where only the charges from the block are transferred (col. 8 lines 26-33, figure 9). Murayama teaches that one row of horizontally arranged charges is transferred to the first and second horizontal transfer lines H.sub.1' and H.sub.2' but fails to teach that the charges from the block of photosensors, from more than one exposure are multiplexed onto the charge shift register. However Elabd teaches that this limitation is well known and used in the art (col. 7 lines 18-38). Therefore taking the combined teachings of Murayama and Elabd, it would have been obvious to one skilled in the art to have been motivated to have charges from a block of photosensors, from more than one exposure being multiplexed onto the charge shift register. The benefit of doing so would be to achieve increase charge transfer efficiency or accumulation of rows.

[Claim 2]

Murayama teaches in figure 8 transferring charges from a block of contiguous photosensors.

[Claim 3]

Elabd teaches transferring charges from alternate photosensors within a block of contiguous photosensors (col. 4 lines 30-41 disclose that the user can select a particular set of rows which are transferred to the transfer registers and the others are dumped. The particular set of rows can be anything including alternate photosensors).

3 . Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murayama et al. (US Patent # 4,974,093), Elabd et al. (US Patent # 5,196,939) as applied to claim 1 above and in further view of Hynecek (US Patent # 6,459,077).

[Claim 4]

Murayama in view of Elabd teach the limitations of claim 1 but fails to teach “.... shifting charges, within the charge shift register, at a lower than normal shift rate”. However Hynecek teaches that these limitations are well known and used in the art (col. 3 lines 35-43). Therefore taking the combined teachings of Murayama, Elabd and Hynecek it would have been obvious to one skilled in the art at the time of the invention to shift charges at a lower than normal shift rate. The benefit of doing so would be to improve the bucket brigade charge transfer efficiency to be similar to that expected of typical CCD devices as taught in Hynecek (col. 3 lines 35-37).

4 . Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Misawa et al. (US Patent # 6,700,607) as applied to claim 5 above in view of Hynecek (US Patent # 6,459,077).

[Claim 6]

Misawa teaches the limitations of claim 5 but fails to teach “.... shifting charges, within the charge shift register, at a lower than normal shift rate”. However Hynecek teaches that these limitations are well known and used in the art (col. 3 lines 35-43). Therefore taking the combined

teachings of Misawa and Hynecek, it would have been obvious to one skilled in the art at the time of the invention to shift charges at a lower than normal shift rate. The benefit of doing so would be to improve the bucket brigade charge transfer efficiency to be similar to that expected of typical CCD devices as taught in Hynecek (col. 3 lines 35-37).

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Elabd et al. (US Patent # 5,196,939) in view of Hynecek (US Patent # 6,459,077).

[Claim 8]

Elabd teaches the limitations of claim 7 but fails to teach “.... shifting charges, within the charge shift register, at a lower than normal shift rate”. However Hynecek teaches that these limitations are well known and used in the art (col. 3 lines 35-43). Therefore taking the combined teachings of Elabd and Hynecek it would have been obvious to one skilled in the art at the time of the invention to shift charges at a lower than normal shift rate. The benefit of doing so would be to improve the bucket brigade charge transfer efficiency to be similar to that expected of typical CCD devices as taught in Hynecek (col. 3 lines 35-37).

*Conclusion*

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- i. Tariki et al. (US Patent # 5,861,917).
- ii. Roberts (US Patent # 5,541,654).
- iii. Sato et al. (US Patent # 5,995,249).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yogesh K Aggarwal whose telephone number is (703) 305-0346. The examiner can normally be reached on M-F 9:00AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc Yen Vu can be reached on (703) 305-4946. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YKA  
May 11, 2004



NGOC-YEN VU  
PRIMARY EXAMINER